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The Bearing of a Synthetic Dye Industry upon Our National Welfare
An Address by Dr. Marston Taylor Bogert

The President's Message
An Editorial

Foreign Trade Opportunities

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8 New York, April 18, 1921 No. 16

THE BEARING OF A SYNTHETIC DYE INDUSTRY UPON OUR NATIONAL WELFARE

An Address by
DR. MARSTON TAYLOR BOGERT

IN presenting his "History of a Crime" to the public, the great Victor Hugo wrote, we believe, one of the shortest prefaces to a historical novel on record. Here it is, complete:

"This book is more than timely; it is needed.

"I publish it. "V. H."

And if we were obliged to keep our introduction to Dr. Bogert's address within the shortest possible space we believe we could not do better than to choose almost the same words—or, better, to paraphrase somewhat in the following fashion:

"This address was more than needed; it contains potent ammunition. We reprint it. "A. D. R."

Unfortunately, we cannot get it all into one issue and have room left over for anything else. It was delivered by Dr. Bogert before a meeting of the Franklin Institute of Philadelphia and is published in the April issue of the "Journal of the Franklin Institute," from which the American Dyes Institute is reprinting it in the form of a bulletin. Ever since the subject of the licensing system for the protection of the American dye industry began to be agitated we have deplored the fact that there was not more in the way of authoritative writings dealing with this subject and the great need for action on the part of Congress. There have been notable contributions, it is true, yet they have not come so close together but that oftentimes, week after week, we have been obliged to inflict upon patient readers our own poor efforts for lack of something better. Other publications have likewise hammered away consistently; nevertheless it has been painfully apparent to The REPORTER, and, we believe, to others, that the number of sources of fresh material was not nearly great enough to produce the desired effect. One wearies of reading, week after week and month after month, the attempts of the same set of individuals to serve up in different ways the same set of ideas, no matter how sound and important those ideas may be.

Of late, however, that which we ardently hoped for has been taking place, and the number of strong contributions

to the cause from those well qualified to participate actively in the battle is increasing by leaps and bounds, and thus the past few weeks have seen us privileged to help pass along the able testimony of Joseph H. Choate, Jr., Robert Mountsier, Major V. Lefebure, General Mitchell and others—not forgetting Dr. Bogert's Wilmington address, "Science and Disarmament." And since, as we have set forth before, we regard it as part of our duty to aid not only in placing these notable efforts on record but in securing for them the widest possible circulation, we continue to feature them and shall continue until Congress makes it no longer necessary to ask for that which should have been given as a matter of course nearly two years ago.

Dr. Bogert needs no introduction here, yet it may not be out of place to mention that, in addition to being Professor of Chemistry at Columbia University, he was formerly President of the International Chemical Society, succeeding Sir William Ramsey and being succeeded to that office by Sir William Crook. Also, he served two terms as President of the American Chemical Society.

He organized the Division of Chemistry and Chemical Technology of the National Research Council, with its thirty-two sub-divisions, and remained as its Chairman until he entered the army. He was appointed a Lieutenant-Colonel, serving as Chief of the Chemical Service Station and as Acting Director of the Gas Service in this country until the organization of the Chemical Warfare Service under General Siebert. He was then promoted to a Colonelcy and remained in the army until honorably discharged in May, 1919.

The first instalment of his Philadelphia address follows:

Introductory

Statistics show that one out of every 1,500 of our population is totally blind. The other 1,499 of us are at least partially so. The one pathetic figure is doomed to complete his pilgrimage in utter darkness, forever excluded alike from the contemplation of what man has wrought through the centuries and from the enjoyment of all those matchless beauties of nature with which the Creator has so lavishly adorned this infinitesimal speck in His boundless universe. The other 1,499 of us travel through life under the impression that we see everything around us. Yet are we blind in some one or in many important respects, for the layman is ever blind to the visions which open out before the imagination of the expert in any line of human endeavor. We cannot hope to see the picture with the eye of the artist, the building with the eye of the architect, or nature with the eye of the naturalist. In such matters our blindness may be but partial or nearly total.

Thus the public still fail to see clearly the bearing of a well-developed and diversified synthetic dye industry upon our individual and national welfare, and how vital it is to our progress and prosperity, or legislation would long ago have been enacted to protect and stimulate our domestic effort in this field and to safeguard it against threatened overwhelming by foreign dumping and competition.

To those who would raise the bogey of an American dye trust, I would reply that there is ample room in our country for small as well as large manufacturing units in this industry, as in the steel business for example. The existence of the U. S. Steel Corporation has not put the independent operators out of business, nor been to the disadvantage of the community.

But in world commerce, as in a world war, there is but one rational method of attack, and that is with an organization of a size and power commensurate with the undertaking. To attempt otherwise will be as futile and as disastrous as were the efforts of the allies to fight the German war machine with a number of separate and insufficiently co-ordinated armies. The greatest and most powerful of Germany's industrial combinations is her giant dye combination.

This huge consolidation has already called for additional capital, the life of the trust has been extended from the year 1966 to 2000, and its dissolution made more difficult by requiring a four-fifths instead of two-thirds majority vote of the participating firms to unscramble it. Further, the Haber nitrogen fixation industry, with an authorized capitalization of half a billion marks, has been placed under the jurisdiction of this same dye trust. Control of the nitrogen supply means direct control of all explosives and of one of the most important constituents of all fertilizers, as well as indirect domination of many other industries. To compete in the world's markets with this giant organization, with the largest and finest equipment in the world, as the result of forty years of intensive effort by thousands of eminent chemists and engineers, certain of our legislators appear to advocate a policy which will make it impossible for us to form any combination equal to the struggle. We have far less to fear from any American combination, the regulation of which is, after all, in our own hands, than from foreign domination of our industries, a control which Germany is now seeking to acquire, and toward which goal she is driving with characteristic thoroughness, persistence and concentration. Our grave danger lies in our failure to apprehend the deadly character of this menace to our safety, and in the short-sighted opposition of those textile manufacturers who cannot see that it is to their own selfish advantage to foster and encourage an American dye industry. If Germany once gains the upper hand in this key industry, we shall ultimately become a subject nation, for, as Lincoln said, "no nation can long exist half slave and half free."

A Few Illustrations

What, then, is this synthetic dye industry that it is of such peculiar impor-

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tance? Aside from the familiar uses of dyes themselves for coloring our flags, uniforms, clothing, and other fabrics, leather, paper, feathers, wood, and many other materials, are there other directions in which this industry ministers to the welfare of mankind and the progress of civilization? Let us look into the matter somewhat more closely to find the answer to this question, and incidentally to gain a better appreciation of what it really covers.

When textiles, for example, are treated with solutions of certain chemicals, the fiber is permeated and penetrated and a more or less brilliant color imparted to it. The fabric so colored is said to be "dyed," and the material producing this effect is therefore known as a "dye" or "dyestuff." If the dyeing has been carried out properly the fabric will be colored evenly throughout, and it will be impossible to remove the color by washing or by other solvents.

Painting, on the other hand, is merely a superficial coating of an article with a colored substance, termed a "pigment," suspended in a suitable liquid "vehicle." Almost any colored substance may serve as a pigment, and various dyes which combine with mineral salts to highly colored solids, called "lakes," are extensively used for this purpose, in addition to the more common mineral pigments not lakes. The usual vehicle for paints is linseed oil, since this on drying gives a tough weather-proof skin, retaining the pigment as an even coating.

Many of these dyes and lakes also form the basis of inks and ink powders.

Dyes are often divided into natural and artificial. The dyes of our ancestors were all natural products, and the proposal to manufacture artificial dyes was received with amusement and scorn, as though man-made products could ever hope to displace nature's greatest coloring agents, like madder and indigo. The more pious of the community even referred to such undertakings as sacrilegious. Nevertheless, the chemist patiently continued his investigations and was soon able to show clearly that it was only certain constituents of the plants which possessed this tinctorial power and that the rest was either wholly useless or even objectionable. Then came the synthesis from anthracene of alizarine (in 1868), the active tinctorial constituent of madder, which was soon followed (in 1870) by the synthesis of indigo from benzole.

Chemistry has not only determined the actual tinctorial constituents in many natural dyes and reproduced them artificially, but it has also shown the way to prepare tens of thousand of other dyes which, so far as we are aware, are not found in nature. Compared with the industry of the artificial dyes, that of the natural dyes is to-day relatively insignificant. Long and patient study of the intimate chemical nature of these synthetic dyes has enabled the investigator to determine in most cases the particular combinations of atoms upon which this tinctorial power depends and the effect produced upon the shade by the alteration of these groups or the insertion of others, so that the expert can now tell in advance, if shown the molecular formula or structure of the dye, just what color it is likely to produce upon cloth. The chemist has succeeded in producing artificial dyes of every conceivable shade of the rainbow, at such a low price, of such purity, fastness and beauty, that the natural dyes either have been driven from the market, or the best of them (like alizarine and indigo) are now made synthetically. Logwood is the most important exception to this, although small amounts of gambier, turmeric, orchil, Persian berry extract, saffron, madder and other natural dyes are still imported. The total value of the natural dyes imported in the year 1919 was $1,247,188, while the artificial dyes and color lakes made in this country the same year were worth $71,778,819.

Practically all of the artificial dyes are prepared synthetically—i. e., built up step by step from simpler substances, somewhat as one might erect a house by laying a suitable foundation and then constructing the different stories

upon it one at a time—and they are hence properly designated as "synthetic dyes," synthesis being the reverse of analysis.

This is simply and quickly demonstrated by the production of a dye from two colorless substances (Naphthol Orange); or, by heating together salicylic acid and wood alcohol, in presence of a little sulphuric acid to assist the reaction, a wholly new compound results, identical with the main constituent of the natural oil of wintergreen and the one to which it owes its characteristic odor and taste, and which is therefore known as the synthetic oil of wintergreen. These are typical syntheses. To prove that natural oil of wintergreen really is a combination of the two substances stated, it can be heated with caustic soda solution, which treatment resolves it again into salicylic acid and wood alcohol. This is an analytical process; in this particular case called a "proximate" analysis, because each of the two substances obtained can be broken down into still simpler substances by suitable treatment.

The vast bulk of our synthetic dyes are all built up from five simple initial materials, the so-called "crudes," which are familiar to all of you. They are the following: Benzole, toluene, naphthalene, anthracene and carbolic acid. Five others, less common but which yield a number of important dyes, are xylene, methyl anthracene, phenanthrene, cresylic acid and carbazole. As all of these ten crudes are found in the tar obtained when coal is heated for the production of illuminating gas or for the manufacture of coke, and as this material constitutes their chief source, the resulting dyes are generally known as "coal-tar dyes," and this appellation has been extended so as to be synonymous with "synthetic dyes," irrespective of whether actually made from coal tar or from crude obtained from other sources.

These crudes, then, represent the foundations upon which we can build an endless variety of structures, of one or several stories. The building operations of the chemist differ somewhat from those of the contractor erecting a house, in that the chemist ordinarily puts up his structure one story at a time, each one being complete in itself, and it may be that he will run it up ten or fifteen stories before putting on the roof. At many of these intervening stages it is entirely possible for him to change his mind and complete the building as a drug, a photographic developer, a perfume, or something else instead of a dye. These intermediate products, therefore, standing as they do midway between the crude initial materials and finished products, are known conventionally as "intermediates," and from our ten crudes approximately 300 intermediates are manufactured commercially for the production of the 1,000 synthetic dyes now found in the world's markets.

According to the recent census conducted by the U. S. Tariff Commission for the year 1919, there were 214 manufacturers of dyes and intermediates, 116 concerns engaged in the manufacture of

(*Continued on page* 12.)

Amanil Colors for Cotton
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AMERICAN DYESTUFF REPORTER
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Pointed solely toward the welfare and growth of the American Dyestuff Industry. Unbiased contributions appreciated.

A. P. HOWES, President
LAURANCE T. CLARK, Editor

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THE PRESIDENT'S MESSAGE

Nowhere throughout the length and breadth of his first message to Congress does President Harding make mention of the Dye bill; neither does he even by implication refer specifically to the dye industry nor more generally to the coal-tar chemical industries, nor in the most casual and general way to the united chemical industries of this country taken as a whole. And considering the definite and specific role which these allied industries are to play during the next four years, together with all other circumstances of time, place and the President's expressed beliefs, this omission would seem to indicate that there still remains a blank space in our national consciousness as personified by the newly installed administration—and furthermore we hold this to be so self-evident to any reader of The Reporter as to require no demonstration in these columns.

Are we presuming, then, to quarrel with and look for minor flaws in the earnest and carefully worked-out production of one a thousand times better fitted to view and express conclusions about national affairs than we? Hardly. Despite the fact that many avail themselves of every citizen's undisputed right to seize upon the Chief Executive's utterances and say: In this he is right, in this wrong, we are in no way minded to court charges that we are afflicted with a similar brand of conceit, and prompt denials of any such insinuations may be obtained upon application to this office (enclose stamp). Our presumption merely carries us as far as the comparatively modest contention that the dye industry—or better, the coal-tar chemical industries—have not as yet, after considerable striving, assumed their proper importance as a concern of the Government, and that this importance is quite great enough at the present time to render them not out of place in a Presidential Message.

Back in 1914, when the knowledge of most of us concerning these industries was not the knowledge of to-day and the issues which now hang upon its welfare were little suspected, it would have seemed rather absurd to single out the dye industry for mention in so necessarily broad a document; and even in the present, were it not for its "key" character and the potentialities which lurk within it, such conspicuous notice, perhaps, would be equally unwarranted. But the developments of the war have given it a weight vastly disproportionate to its actual size and the amount of capital invested, have placed it shoulder to shoulder in importance with the Army and Navy.

Mr. Harding was a member of that Senate majority which abjectly obeyed Boies Penrose's orders to let the Dye bill wait until all the "popgun tariff bills" could be considered together—a lamentable intrusion of politics upon national welfare which ought never to have been permitted by those capable of making an official protest—and as such he had the facts laid before him, together with the highly significant occurrences of a normally low-tariff President thrice going out of his way to recommend prompt action leading to drastic protection. But since the message was evidently not delivered clearly enough to arouse the greater number of his colleagues—though how the Nugent, Frelinghuysen and Watson speeches could fail of their purpose is puzzling—it is by no means just to blame him if he has not yet absorbed the full story. Again, we should not presume; we say this in all sincerity and without the implied "tongue in the cheek"

manner in which we are sometimes wont to indulge. Harding the President is a different personage altogether from Harding the Senator, as many will soon find out. He has been invested with an authority and a power which is probably greater in its actual effect than that of any other nominal government head in the world to-day, and certainly far greater than that which he exercised as a member of the Senate. He has stepped from the ranks into the leadership of his party. Under such circumstances one may well expect him or any man to expand to the full extent of his capabilities.

What those capabilities are he apparently will not be slow in revealing to us. For if the substance of a Presidential Message must consist in the main of generalities, our new President has not hesitated to be very specific on such points as he believed to be of paramount importance. And if he did not include the coal-tar chemical industries in this list, at least his remarks on questions which have a general bearing on the policy which he may be expected to follow with regard to them, contain much in the way of encouragement.

On the subject of disarmament, he declares that the burden of heavy military forces should be removed from the people of the world, but that while "we are ready to co-operate with other nations to approximate disarmament, . . . merest prudence forbids that we disarm alone." He also serves notice on other governments as well as our own that our attitude in maintaining proper defenses "can carry no threat after the latest proof of our unselfishness."

With this expressed belief as a guide to his sentiments, we may well conclude that the ultimate realizations of the ability of the coal-tar chemical industries to enable us to proceed a long way in the direction of curtailing military expenses, would be received by him with no little satisfaction, and that his hearty support

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would be assured for any measure calculated to bring about, to such a degree, his wishes, without endangering the safety of the country.

Passing over his sound ideas on the encouragement of aviation as a factor in our commercial and military preparedness, one finds him likewise holding very definite views as to the safeguarding of our industries. "I believe in the protection of American industry," he says, "and it is our purpose to prosper America first."

Again: "The privileges of the American market to the foreign producer *are offered too cheaply to-day, and the effect on our own productivity is the destruction of our self-reliance,* which is the foundation of the independence and good fortune of our people. Moreover, imports should pay their fair share of our cost of government."

Surely this augurs well. Here's another pointed paragraph: "One who values American prosperity and maintained American standards of wage and living can have no sympathy with the proposal that easy entry and the flood of imports will cheapen our costs of living. It is more likely to destroy our capacity to buy."

Further: "We offer, essentially unprotected, the best market in the world." Indeed, if this does not refer specifically to our dye market, the facts in the case of the latter should gain easy access to our President's interest and understanding. And finally, we come to: "There is little sentiment in the trade of the world. Trade can and ought to be honorable, but it knows no sympathy."

And so, while it may be that the role of the dye industry has not yet come as fully to the attention of a man beset by numberless demands upon his time as it will assuredly come a little later, it seems to be equally evident that when it does the industry can count upon the full weight of his influence and support.

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THE DYE INDUSTRY AND NATIONAL WELFARE

(*Continued from page* 9.)

intermediates, and 155 in the production of finished dyes and other synthetics, 90 of them turning out only dyes (63,402,194 pounds, valued at $67,598,855).

Those engaged in other lines than dyes were as follows:

	Pounds Mfd.	Value of Output
Color lakes—		
34 firms.....	2,569,921	$4,179,964
Medicinals—		
31 firms.....	6,777,988	7,883,071
Photochemicals—		
10 firms.....	335,509	1,059,340
Flavors—		
9 firms.....	610,825	1,318,654
Phenolic resins (5) and tannins (1)		
6 firms.....	3,794,534	2,381,358
Perfume—		
6 firms.....	41,419	164,302

Considerable progress was recorded in the United States dye industry during 1919. The list of intermediates was augmented by 76 not previously manufactured here, bringing our total up to 216, and there was a considerable increase in the output of the higher grade ones. In the quality and quantity of finished dyes, there was also a gratifying growth as compared with 1918, the total production being 38 per cent greater in amount than our total imports of dyes for the fiscal year 1914. In fact, we have ourselves already become exporters of dyes, our exports for the nine months ending September 30, 1920, having

been valued at $26,032,389, which exceeds the total value of dyes imported during the fiscal year 1914. Of this amount $17,038,235 represented aniline dyes, $2,321,090 logwood extracts, and $6,673,064 other dyes. To be sure, an important factor in this achievement was the absence of foreign (especially German) competition, but it shows none the less the rapid strides made in the development of our domestic industry.

Our 216 intermediates in 1919 were derived from the following crudes: benzole = 55, toluene = 47, xylene = 4, naphthalene = 66, anthracene = 10, carbolic acid = 26, other crudes = 8.

(To be continued.)

CHEMISTS TO WELCOME MADAME CURIE

Chemists of New York are preparing to welcome Madame Curie, discoverer of radium, who is expected to arrive in this country from Europe early next month.

It has been decided to have a luncheon in her honor on May 17 at the Waldorf Astoria. The organizations which will join in doing honor to the distinguished woman scientist are: the New York Section of the American Chemical Society, the Chemists Club, the New York branch of the Society of Chemical Industry, the American Electrochemical Society, and the Societe de Chimie Industrielle, American Section.

Madame Curie is coming to this country to receive the gift of a gram of radium, to be presented to her by a committee of American women in recognition of her distinguished services to science.

The chemists who will take part in the luncheon are representative of their profession in New York City and the neighborhood. There will also be women guests.

The Committee on Arrangements consists of Dr. Edgar F. Smith, representing the American Chemical Society; Dr. Colin G. Fink, of the American Electrochemical Society; Dr. George F. Kunz, of the Societe de Chimie Industrielle; Dr. S. R. Church, of the American Section of the Society of Chemical Industry, and Dr. J. E. Zanetti, of the Chemists Club.

NATIONAL ANNOUNCES ERIE FAST ORANGE A

This color is the latest addition to the series of direct dyes produced by the National Aniline & Chemical Company, Inc., and places in the hands of dyers a desirable product for both self and compound shades on cotton, producing shades from a bright, fiery orange, to a delicate salmon, as well as being useful for other materials.

"National" Erie Fast Orange A is particularly fast to light, washing, and perspiration, besides possessing the excellent qualities of easy solubility and level dyeing, which latter feature will commend its use in machine dyeing, whether in the jig or pad.

It is recommended for the dyeing

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of mercerized cotton; for covering cotton and artificial silk effects; for general union goods dyeing; for paper staining; for jute, straw and chip dyeing; and for coloring both chrome and vegetable tanned sheepskins. On both weighted and unweighted silk, shades are produced that are fast to light and alkalies.

It is expected that "National" Erie Fast Orange A will occupy a prominent place in the dyehouse on account of its excellent qualities and general adaptability.

RESIGNS N. C. TEXTILE SCHOOL INSTRUCTORSHIP TO ENTER BUSINESS

G. E. Bush has resigned his position as Instructor in Carding and Spinning at the North Carolina Textile School to accept a position in the Fabric Department of the Firestone Tire & Rubber Company, Akron, Ohio. Mr. Bush graduated from the school, which is a department of the North Carolina State College, in 1919, and was awarded the Students' Medal by the National Association of Cotton Manufacturers.

Maurice Hendrick, who has recently been promoted to the post of general superintendent of Cliffside Mills, Cliffside, N. C., is also a graduate of the Textile School and was awarded the Students' Medal. Mr. Hendrick graduated in 1908 and has been assistant superintendent of these mills for a number of years.

To manufacture and deal in power and chemical equipment, the Power & Chemical Equipment Company has been incorporated under the laws of New Jersey. Headquarters will be in Hoboken and the capital is $100,000, although business will be started with $1,000. The incorporators are Edward D. Gross, John J. Marnell and Francis T. Morgan, all of Hoboken.

INFLUENCE OF MOISTURE ON SHADE

Variations Due to the Hygrometric State of Material

By J. Rouffin

All dyers have noted that dyeings with some coloring matters are modified by heat, usually the shade is reddened. Yellow shades appear more like orange, and orange shades more on the scarlet side. This alteration of the shades takes place slowly. In most instances, the lapse of a couple of hours will be required before the return of the original shade.

It has also been observed that the modification of the shade depends largely on the nature of the coloring matter employed; some are extremely sensitive to heat, and others not at all. When using those that are very sensitive to heat, precautions should be taken in the course of matching off. Samples taken from the dyeing should only be dried at a high temperature when it is desired to ascertain quickly the state of progress of the dyeing. The final matching needs to be accomplished with more precaution.

As to the cause of the phenomenon, the opinion generally held is that it is due to a specific action of the heat on the coloring matter. This interpretation is, however, open to doubt for the following reasons: (1) The shade

changed by heat only returns slowly to its initial tone long after the temperature of the material has fallen to that of the surrounding atmosphere, and (2) the color of the material as it leaves the boiling liquor is the same as that of a wet but cool pattern from the same batch, and in both cases the color is different from that of a dry and cold samples, but the difference is in the inverse sense from the variation produced by heat.

It appears reasonable, therefore, to suggest that the variation of the shade may be directly due to the hygrometric state of the material. In attempting to verify this hypothesis, samples of woolen felt dyed with different coloring matters were taken and cut each into three parts. One lot was placed in a desiccator holding a vessel of concentrated sulphuric acid; that is, in a dry atmosphere, where the wool would have the moisture taken from it progressively at the ordinary temperature until completely dry. Another lot was placed in a desiccator holding a vessel of pure water; that is, in an atmosphere saturated with moisture, where the wool would absorb progressively, and without being heated or cooled, the maximum amount of water it is able to carry. The third lot was kept in the air of the room.

The results have confirmed the hypothesis advanced. In the dry atmosphere the colors became modified in the same manner as takes place by drying them in the dry-room. In the moist atmosphere the colors became modified to the same extent as a wet cold pattern. The experiments were repeated with a large number of the acid and chrome dyestuffs for wool, and in each instance the immediate cause of the alteration of the shade was the hygrometric state of the fiber.

Heat only intervenes as a moisture-removing agent. That the return to the original shade takes place slowly may be explained by the fact that time is required for dried wool to resume its normal hygrometric state. As has already been stated, many coloring matters are very sensitive to heat, some others are hardly affected at all, while others are most profoundly affected. One coloring matter may furnish a bluish green, which, on material in the moist condition, will appear to be quite green, and which passes to blue by desiccation.—*L'Industrie Textile.*

ATLANTIC YELLOW R NOW ON MARKET

Atlantic Yellow R, a clear reddish Sulphur Yellow of standard properties, has just been put on the market by the Atlantic Dyestuff Company.

The Company states that with the addition of this Sulphur Yellow to their present line of this class of colors, the need for further importation of Sulphur Yellow from abroad should be materially lessened.

NATIONAL ISSUES "DYES FOR PAPER," SHOWING 144 COMPLETE DYEINGS

The National Aniline & Chemical Company never does things by halves, and in issuing its latest color book,

Jacques Wolf & Co.

MANUFACTURING CHEMISTS AND IMPORTERS

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"Dyes for Paper," it maintains in splendid fashion its practice of offering to the purchaser not only a wide range of materials to work with, but likewise the highest degree of service and co-operation in securing results. Again it calls to mind the fact that one of the highest cards in the Germans' erstwhile invincible deck was the service which the consumer could buy along with his colors, and that our American dye manufacturers have not been slow to see the necessity of duplicating their performance in this respect.

The new color card, which is believed to be one of the most complete for paper ever distributed in this country by any dye concern, consists of nine panels, each containing sixteen samples illustrating a wide range for use on bleached sulphite, unbleached sulphite and kraftstock, and on stock containing 75 per cent ground wood and 25 per cent unbleached sulphite. The range includes some fifty-two colors, and in all 144 complete dyeings are shown. On the bleached sulphite there are shown twenty-four colors, ranging through the different shades of yellow and orange to the scarlets, blues and violets. On the unbleached sulphite there are also twenty-four colors shown; on the mixed ground wood and unbleached sulphite there are sixteen, and the effects obtainable on kraftstock are illustrated by sixteen more.

The colors are divided into acid, basic and direct, and each sample is plainly marked "A," "B" or "D" to show in which classification the color belongs. Each color for use on any of the designated varieties of stock is illustrated by two dyed samples showing respectively the effect produced by one and five pounds per 1,000 pounds of bleached sulphite, kraftstock, etc., as the case may be, except in such instances where deeper shades are wanted, when the same proportions are maintained by showing the result of two and ten pounds, and five and twenty-five pounds per 1,000 pounds of stock. Brief descriptions of the general characteristics of the acid, basic and direct colors on paper, hints on dyeing, together with special data on Cotton Blue B, Wool Yellow Ex. Conc., Erie Red 4B, Erie Congo 4B and Metanil Yellow 1955, preface the display of samples.

The new card is uniform with the other color cards of the National Company—a feature, it goes without saying, to be highly commended—and those interested may obtain copies by applying to the firm's home office, 21 Burling Slip, New York. The company maintains laboratories equipped with every modern facility and an experienced technical staff which it places at the disposal of its customers in every part of the world, and the matching of shades on any particular material, a co-operative effort in solving problems, and the supplying of special technical data referring to the application of dyestuffs—all without expense to the consumer—are important features of "National" service.

Wanted—Chemical Engineer

Experienced in operating plant for manufacture of dyestuffs—capable of conducting researches and introducing processes. Address Box 11, American Dyestuff Reporter, 4109 Woolworth Building, New York City.

FOREIGN TRADE OPPORTUNITIES

Names and addresses of any of the firms mentioned below may be obtained by direct application to the U. S. Bureau of Foreign and Domestic Commerce, which compiled the list, or any of its district and co-operative offices. The Bureau does not furnish credit rating or assume responsibility as to the standing of foreign inquirers. Applications for particulars should refer to opportunity numbers; and in case information is desired regarding more than one, inquiries should be made on separate sheets.

34570—A mercantile company in Rumania desires to purchase and secure an agency for the sale of *chemicals*, drugs,

anilines and *dyes*. Quotations should be given c. i. f. Rumania. References.

—o—

34555—A mercantile firm in Algeria desires to establish connections with firms in position to supply *cotton and silk goods* of all kinds, sugar, coffee, spices and rice. Quotations should be given c. i. f. Algeria. References.

—o—

34637—A commercial agency firm in Australia desires to secure an agency for the sale of oils, fats and waxes, and *chemicals*. Quotations should be given c. i. f. Melbourne. References.

—o—

34690—A commercial agent in the United States, who is about to return to Mexico, desires to secure an agency on a commission basis for the sale of shoes, *hosiery, underwear and dry goods*. No reference given.

—o—

34682—A firm of importers in India desires to secure an agency for the sale of *aniline dyes*, paper of all kinds, *chemicals*, patent medicines, mill stores, stationery and sundries, etc. Quotations should be given c. i. f. India ports. References.

—o—

34606—A commercial representative from Australia is in the United States for a short time and desires to secure agencies for the sale of women's apparel of all kinds, including shoes, *hosiery, gowns*, corsets, furs, gloves and *underwear;* also *dyestuffs in packages*. References.

—o—

34640—A merchant in Italy desires to purchase oxide of zinc, carbonate of lead, red lead, and *colors in powder form for paints*. Shipments to be made in kegs. Quotations should be given c. i. f. Italian port. Cash to be paid. Correspondence should be in Italian or French. References.

—o—

34557—A manufacturer's representative from Venezuela is in the United States and desires to secure an agency for the sale of *cotton goods*, glassware, table and window glass, pharmaceutical goods, enamel ware, flour, leather and tools. References.

—o—

34654—An importer of wool in France desires to purchase from American farmers and requests that samples of *wool* be submitted to him. He also wishes to be placed in communication with a firm that would be willing to ship a certain quantity to France on consignment. No reference offered.

—o—

34660—A commercial agent in Bulgaria desires to secure an agency for the sale of *tanning extracts* and materials. Quotations should be given c. i. f. Bourgas. Terms: Part cash, balance against documents. Correspondence should be in Bulgarian or French. Reference.

—o—

34667—An industrial engineer in Spain desires to secure an agency for the sale of machinery of every description, also mechanical, electrical and *chemical laboratory supplies* and railroad supplies. Quotations should be given c. i. f. Barcelona and Bilbao.

CHEMCO FOR CHEMCO

LEVEL DYEING ACID COLORS

Consult

The Chemical Company of America, Inc.

46 Murray Street, New York City

Correspondence should be in Spanish.

—o—

34642—A company of commission agents in India desires to purchase and secure an agency for *textiles,* haberdashery, *hosiery, dyes, woolen yarn, wool* (*Berlin wool*), buttons, hardware, stationery, glassware, glass bangles and beads, laces, ribbons, trimmings, and gold and silver thread. Quotations should be given c. i. f. Indian port. Reference.

—o—

34619—A mercantile firm in India desires to purchase *hosiery* for men, women and children in *silk, cotton and wool,* and *ribbons,* embroidery trimmings, women's and children's ready-made garments in wool and cotton, men's underwear, and special lines. Quotations should be given c. i. f. Indian port. References.

Dye-a-Grams

Strikes are a national disease. An ounce of prevention would be better than any amount of cure!

—o—

Tips may be classed as a gift. To our notion they're an indemnity.

—o—

THE "OFF" WEEK—*"Reporter"* Headline. It'll be an "on" week, we'd say, when Congress passes the Dye bill.

—o—

If Germany wants to raise funds, we suggest she pawn the "Watch" on the Rhine!

—o—

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—o—

Herr Gustave MacDonald—Sounds like a Scottish insult!

—o—

Reparation Colors be d——d; what we want is Reparation Money (ACTION, NOT SYMPATHY!).

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Cotton Bleachers Use
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to produce a foundation
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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF AMERICAN DYESTUFF REPORTER.

Published weekly at New York, N. Y., for April 1, 1921.

State of New York, County of New York, ss.: Before me, a notary public in and for the State and county aforesaid, personally appeared Alfred P. Howes, who, having been duly sworn according to law, deposes and says that he is the publisher of the American Dyestuff Reporter, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the name and addresses of the publisher, editor, managing editor and business manager are:

Publisher—Alfred P. Howes, 4109 Woolworth Building, New York City. Editor—Laurance T. Clark, 4109 Woolworth Building, New York City. Managing Editor—Laurance T. Clark, 4109 Woolworth Building, New York City. Business Manager—Eugene C. Mayer, 4109 Woolworth Building, New York City.

2. That the owners are: Howes Publishing Co., Inc., 4109 Woolworth Building, New York City; Alfred P. Howes, 4109 Woolworth Building, New York City; Mary K. Howes, Northampton, Mass.; William F. Collins, Upper Montclair, N. J.; Derfla H. Collins, Upper Montclair, N. J.; N. H. Hiller, Carbondale, Pa.; Jos. L. Schroeder, Hartsdale, N. Y.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

Alfred P. Howes,
Publisher.

Sworn to and subscribed before me this 24th day of March, 1921.

[Seal] Edw. E. Vincent.
(My commission expires March 30, 1922.)

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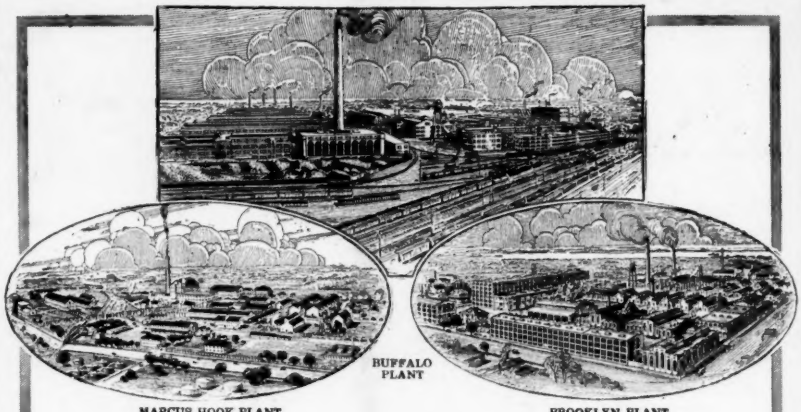

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